

**WHAT IS CLAIMED IS:**

1. An information processing apparatus having a generation function of generating printing data to be transmitted to a printer, comprising:
  - 5 a storage which saves printing data of each original page in an intermediate format together with printing setting data;
  - a printing controller which causes a user to change a printing setting and issue a printing instruction; and
  - 10 a printing data reading unit which reads out the printing setting data from said storage in accordance with the printing instruction, changes a color mode setting of the read printing setting data in accordance with a color mode setting in the printer that is changed by said printing controller, and generates by using the generation function the printing data containing an instruction of changing the color mode on the basis of the printing setting data.
- 20 2. The apparatus according to claim 1, wherein the printing setting changed by said printing controller includes the color mode setting of each original page in the printer, and said printing data reading unit changes the color mode setting of the read printing setting data for each printing medium including the original page whose printing setting has been changed.
- 25 3. The apparatus according to claim 1, wherein the

- printing setting changed by said printing controller includes the color mode setting of each chapter formed by a plurality of original pages in the printer, and said printing data reading unit changes the color mode
- 5 setting of the read printing setting data for a set of printing media corresponding to the chapter whose printing setting has been changed.
4. The apparatus according to claim 1, wherein said printing data reading unit determines whether the
- 10 printer copes with a change of the color mode before the printing data containing the instruction of changing the color mode is generated by using the generation function, when the printer copes with the change, generates, by using the generation function,
- 15 printing data containing the instruction of changing the color mode, and when the printer does not cope with the change, generates, by using the generation function, printing data containing no instruction of changing the color mode.
- 20 5. The apparatus according to claim 1, wherein said printing data reading unit determines whether the printing setting changed by said printing controller includes the color mode setting of each original page in the printer, when the printing setting includes the
- 25 color mode setting of each original page, changes the color mode setting of the read printing setting data for each printing medium including the original page

- whose printing setting has been changed, when the printing setting does not include the color mode setting of each original page, determines whether the printing setting includes the color mode setting of
- 5 each chapter formed by a plurality of original pages in the printer, when the printing setting includes the color mode setting of each chapter, changes the color mode setting of the read printing setting data for a set of printing media corresponding to the chapter
- 10 whose printing setting has been changed, and when the printing setting does not include the color mode setting of each chapter, changes the color mode setting of the whole printing data in the printer.
6. An information processing apparatus which
- 15 generates printing data to be transmitted to a printer, comprising:
- a save unit which saves document data to be printed together with printing setting data;
- a printing setting unit which sets in printing
- 20 setting data a color mode of whether color printing or monochrome printing is performed for a predetermined unit of document data; and
- printing data generation means for generating the printing data by issuing a color mode designation
- 25 instruction in order to change the color mode for the predetermined unit on the basis of the printing setting data.

7. The apparatus according to claim 6, wherein said save unit converts data input from an application, and stores the converted data as the document data of an intermediate format in a document file.
- 5 8. The apparatus according to claim 6, wherein said save unit manages the document data by a tree structure having a plurality of chapters defined by dividing the document data into a plurality of original pages.
9. The apparatus according to claim 8, wherein said 10 printing setting unit can set designation of the color mode for each original page, each chapter, and the whole document data.
10. The apparatus according to claim 9, wherein said printing setting unit can designate whether the color 15 mode for a chapter of the document data is set to the color mode of the whole document data or separately set.
11. A printing data generation method having a generation function of generating printing data to be 20 transmitted to a printer, comprising:
  - a save step of saving printing data of each original page in an intermediate format together with printing setting data;
  - a printing control step of causing a user to 25 change a printing setting and issue a printing instruction; and
  - a printing data reading step of reading out the

- printing setting data saved in the save step in accordance with the printing instruction, changing a color mode setting of the read printing setting data in accordance with a color mode setting in the printer
- 5 that is changed in the printing control step, and generating by using the generation function the printing data containing an instruction of changing the color mode on the basis of the printing setting data.
12. The method according to claim 11, wherein the printing setting changed in the printing control step includes the color mode setting of each original page in the printer, and in the printing data reading step, the color mode setting of the read printing setting data is changed for each printing medium including the original page whose printing setting has been changed.
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13. The method according to claim 11, wherein the printing setting changed in the printing control step includes the color mode setting of each chapter formed by a plurality of original pages in the printer, and in the printing data reading step, the color mode setting of the read printing setting data is changed for a set of printing media corresponding to the chapter whose printing setting has been changed.
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14. The method according to claim 11, wherein in the printing data reading step, whether the printer copes with a change of the color mode is determined before the printing data containing the instruction of
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changing the color mode is generated by using the generation function, when the printer copes with the change, printing data containing the instruction of changing the color mode is generated by using the 5 generation function, and when the printer does not cope with the change, printing data containing no instruction of changing the color mode is generated by using the generation function.

15. The method according to claim 11, wherein in the 10 printing data reading step, whether the printing setting changed in the printing control step includes the color mode setting of each original page in the printer is determined, when the printing setting includes the color mode setting of each original page,

15 the color mode setting of the read printing setting data is changed for each printing medium including the original page whose printing setting has been changed, when the printing setting does not include the color mode setting of each original page, whether the 20 printing setting includes the color mode setting of each chapter formed by a plurality of original pages in the printer is determined, when the printing setting includes the color mode setting of each chapter, the color mode setting of the read printing setting data is 25 changed for a set of printing media corresponding to the chapter whose printing setting has been changed, and when the printing setting does not include the

color mode setting of each chapter, the color mode setting in the printer is changed for the whole printing data.

16. A printing data generation method of generates  
5 printing data to be transmitted to a printer,  
comprising:

a save step of saving document data to be printed together with printing setting data;

- 10 a printing setting step of setting in printing setting data a color mode of whether color printing or monochrome printing is performed for a predetermined unit of document data; and

- 15 a printing data generation step of generating the printing data by issuing a color mode designation instruction in order to change the color mode for the predetermined unit on the basis of the printing setting data.

17. The method according to claim 16, wherein in the save step, data input from an application is converted  
20 and stored as the document data of an intermediate format in a document file.

18. The method according to claim 16, wherein in the save step, the document data is managed by a tree structure having a plurality of chapters defined by  
25 dividing the document data into a plurality of original pages.

19. The method according to claim 18, wherein in the

printing setting step, designation of the color mode can be set for each original page, each chapter, and the whole document data.

20. The method according to claim 19, wherein in the  
5 printing setting step, whether the color mode for a chapter of the document data is set to the color mode of the whole document data or separately set can be designated.

21. A printing control program having a generation  
10 function of causing a computer to generate printing data to be transmitted to a printer, wherein the printing control program causes the computer to execute  
a save step of saving printing data of each original page in an intermediate format together with  
15 printing setting data,

a printing control step of causing a user to change a printing setting and issue a printing instruction, and

a printing data reading step of reading out the  
20 printing setting data saved in the save step in accordance with the printing instruction, changing a color mode setting of the read printing setting data in accordance with a color mode setting in the printer that is changed in the printing control step, and  
25 generating by using the generation function the printing data containing an instruction of changing the color mode on the basis of the printing setting data.

22. The program according to claim 21, wherein the printing setting changed in the printing control step includes the color mode setting of each original page in the printer, and in the printing data reading step,
- 5 the color mode setting of the read printing setting data is changed for each printing medium including the original page whose printing setting has been changed.
23. The program according to claim 21, wherein the printing setting changed in the printing control step
- 10 includes the color mode setting of each chapter formed by a plurality of original pages in the printer, and in the printing data reading step, the color mode setting of the read printing setting data is changed for a set of printing media corresponding to the chapter whose
- 15 printing setting has been changed.
24. The program according to claim 21, wherein in the printing data reading step, whether the printer copes with a change of the color mode is determined before the printing data containing the instruction of
- 20 changing the color mode is generated by using the generation function, when the printer copes with the change, printing data containing the instruction of changing the color mode is generated by using the generation function, and when the printer does not cope
- 25 with the change, printing data containing no instruction of changing the color mode is generated by using the generation function.

25. The program according to claim 21, wherein in the printing data reading step, whether the printing setting changed in the printing control step includes the color mode setting of each original page in the printer is determined, when the printing setting includes the color mode setting of each original page, the color mode setting of the read printing setting data is changed for each printing medium including the original page whose printing setting has been changed, when the printing setting does not include the color mode setting of each original page, whether the printing setting includes the color mode setting of each chapter formed by a plurality of original pages in the printer is determined, when the printing setting includes the color mode setting of each chapter, the color mode setting of the read printing setting data is changed for a set of printing media corresponding to the chapter whose printing setting has been changed, and when the printing setting does not include the color mode setting of each chapter, the color mode setting in the printer is changed for the whole printing data.
26. A printing control program of causing a computer to generate printing data to be transmitted to a printer, wherein the printing control program causes the computer to execute
- a save step of saving document data to be printed

together with printing setting data,

a printing setting step of setting in printing setting data a color mode of whether color printing or monochrome printing is performed for a predetermined

5 unit of document data, and

a printing data generation step of generating the printing data by issuing a color mode designation instruction in order to change the color mode for the predetermined unit on the basis of the printing setting

10 data.

27. The program according to claim 26, wherein in the save step, data input from an application is converted and stored as the document data of an intermediate format in a document file.

15 28. The program according to claim 26, wherein in the save step, the document data is managed by a tree structure having a plurality of chapters defined by dividing the document data into a plurality of original pages.

20 29. The program according to claim 28, wherein in the printing setting step, designation of the color mode can be set for each original page, each chapter, and the whole document data.

30. The program according to claim 29, wherein in the 25 printing setting step, whether the color mode for a chapter of the document data is set to the color mode of the whole document data or separately set can be

**designated.**